



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/723,893	11/26/2003	Charles Cameron Brackett	133162IT/YOD GEMS:0233	1135
7590 Patrick S. Yoder FLETCHER YODER P. O. Box 692289 Houston, TX 77269-2289			EXAMINER WOZNIAK, JAMES S	
			ART UNIT 2626	PAPER NUMBER
			MAIL DATE 05/17/2007	DELIVERY MODE PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/723,893	Applicant(s) BRACKETT ET AL.	
	Examiner James S. Wozniak	Art Unit 2626	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 26 November 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-37 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-37 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 26 November 2003 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Drawings

1. The drawings are objected to because:

In Fig. 6, Element 122, "SPEAR COMMAND" should be changed to --SPEAK COMMAND--.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Specification

2. The disclosure is objected to because of the following informalities:

The disclosure and abstract are objected to because the term “voice recognition” is misused for what nowadays is called --**speech recognition**-- in the speech signal processing art. While “voice recognition” and “speech recognition” were both once used interchangeably to refer to spoken word recognition, nowadays these two terms are distinguished. The term “**voice** recognition” now denotes identification of *who* is doing the speaking (class 704/246), while “**speech** recognition” (or “**word** recognition”) denotes identification of *what* is being said (class 704/251). So, appropriate correction to the proper terms of art is required.

Appropriate correction is required.

Claim Objections

3. **Claims 1-22, and 28-29** are objected to because of the following informalities:

In **Claims 1 and 8**, Line 1, “medical systems” should be changed to --medical system-- in order to provide proper antecedent basis for “medical system” in claims 1, 8, and dependents thereof.

Claims 2-3 and 8-22 are objected to because the term “voice recognition” is misused for what nowadays is called --**speech recognition**-- in the speech signal processing art. While “voice recognition” and “speech recognition” were both once used interchangeably to refer to spoken word recognition, nowadays these two terms are distinguished. The term “**voice**

recognition” now denotes identification of *who* is doing the speaking (class 704/246), while “speech recognition” (or “word recognition”) denotes identification of *what* is being said (class 704/251). So, appropriate correction to the proper terms of art is required.

In **Claim 11**, Line 2, “the total configured voice commands” should be changed to --total configured voice commands-- in order to provide proper antecedent basis for the limitation in the claim.

In **Claim 14** “acknowledges” should be changed to --acknowledging--.

In **Claim 16**, --and-- should be inserted at the end of Line 5.

In **Claim 28**, the “PACS” acronym should be expanded to clarify its meaning.

The dependent claims fail to overcome the preceding objections directed towards the independent claims, and thus, are also objected to due to minor informalities.

Appropriate correction is required.

Claim Rejections - 35 USC § 112

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

5. **Claims 1, 8, and 36** rejected under 35 U.S.C. 112, second paragraph, as being incomplete for omitting essential steps, such omission amounting to a gap between the steps. See MPEP § 2172.01. The omitted steps are: recognizing the received one or more voice commands. This omitted step is essential because a spoken command cannot be implemented or

executed if it has not first been recognized. The dependent claims fail to overcome the preceding rejection, and thus, are also rejected under 35 U.S.C. 112.

Claims 23 and 33 are rejected under 35 U.S.C. 112, second paragraph, as being incomplete for omitting essential elements, such omission amounting to a gap between the elements. See MPEP § 2172.01. The omitted elements are: an speech input means/microphone for receiving a voice command. The omitted element is essential because voice commands have to be received before they can be recognized. The dependent claims fail to overcome the preceding rejection, and thus, are also rejected under 35 U.S.C. 112.

Claim Rejections - 35 USC § 101

6. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

7. **Claims 36-37** are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter.

Claims 36 and 37 are drawn to a “program” *per se* (rather than a computer readable medium encoded with a program for enabling a computer to perform a method when the program is executed comprising...) as recited in the preamble (“A computer program...comprising”) and as such are directed to non-statutory subject matter. See MPEP § 2106.IV.B.1.a. Data structures not claimed as embodied, embedded, or encoded in computer readable media are descriptive material *per se* and are not statutory because they are not capable of causing functional change in the computer. See, e.g., *Warmerdam*, 33 F.3d at 1361, 31

USPQ2d at 1760 (claim to a data structure *per se* held nonstatutory). Such claimed data structures do not define any structural and functional interrelationships between the data structure and other claimed aspects of the invention, which permit the data structure's functionality to be realized. In contrast, a claimed computer readable medium encoded with a data structure defines structural and functional interrelationships between the data structure and the computer software and hardware components which permit the data structure's functionality to be realized, and is thus statutory. Similarly, computer programs claimed as computer listings *per se*, i.e., the descriptions or expressions of the programs are not physical "things." They are neither computer components nor statutory processes, as they are not "acts" being performed. Such claimed computer programs do not define any structural and functional interrelationships between the computer program and other claimed elements of a computer, which permit the computer program's functionality to be realized.

Claim Rejections - 35 USC § 102

8. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

9. **Claims 1-6, 8-14, 16-27, and 30-37** are rejected under 35 U.S.C. 102(b) as being anticipated by Brant et al (*U.S. Patent: 6,278,975*).

With respect to **Claim 1**, Brant discloses:

Determining available voice commands within a medical system control scheme
(determining available voice commands for a particular medical system context, Col. 6, Line 43- Col. 7, Line 53; and Col. 10, Line 56- Col. 11, Line 6);

Graphically displaying the available voice commands *(pop-up menu on a display that lists available voice commands, Col. 6, Line 58- Col. 7, Line 53; and Figs. 6-8);*

Receiving one or more voice commands corresponding to one or more of the available voice commands *(receiving a spoken command via a microphone input, Col. 6, Line 63- Col. 7, Line 15);* and

Implementing the one or more voice commands to control the medical system *(voice command and control of a medical system in response to recognized commands, Col. 4, Lines 15-33; and Col. 6, Line 57- Col. 7, Line 15).*

With respect to **Claim 2**, Brant further discloses:

The available voice commands are recognizable by a voice recognition control system at a current point in a menu tree and are graphically displayed at an interface of the medical system *(displaying available voice commands that are recognizable for a current context in a menu sequence, Col. 7, Lines 16-53; and Figs. 6-8).*

With respect to **Claim 3**, Brant further discloses:

The voice recognition control system is configured for "command and control" *(Col. 4, Lines 15-33)* and the available voice commands are automatically displayed *(automatic computer-generated pop-up menus of available voice commands, Col. 7, Lines 16-53; and Figs. 6-8).*

With respect to **Claims 4-5**, Brant further discloses generating an audio feedback in response to a received command (*Col. 4, Lines 62-65*).

With respect to **Claim 6**, Brant further discloses:

Determining and graphically displaying further available commands at the interface of the medical system (*generating further pop-up menus in response to received voice commands, Col. 7, Lines 16-53*).

Claim 8 contains subject matter similar to Claim 1, and thus, is rejected for the same reasons.

With respect to **Claim 9**, Brant further discloses:

The recognizable commands are displayed in a popup box of contextual voice cues (*pop-up menu, Col. 7, Lines 16-53*).

Claim 10 contains subject matter similar to Claim 2, and thus, is rejected for the same reasons.

With respect to **Claim 11**, Brant further discloses:

The recognizable voice commands are a subset of the total configured voice commands of the voice control system of the medical system (*display listing of available valid commands that do not include all system speech commands and ignoring a non-valid command outside of the available command subset, Col. 6, Line 58- Col. 7, Line 15*).

Claim 12 contains subject matter similar to Claim 3, and thus, is rejected for the same reasons.

Claim 13 contains subject matter similar to Claim 4, and thus, is rejected for the same reasons.

With respect to **Claim 14**, Brant further discloses:

The user acknowledging indication of the one or more voice commands initiates execution of the one or more voice commands to control the medical system (*user confirmation of a voice command, Col. 8, Lines 3-21*).

With respect to **Claim 16**, Brant discloses:

Navigating through a menu tree of a voice recognition control system of a medical system (*user navigation through a sequence of menus, Col. 6, Line 43- Col. 7, Line 53*);

Reviewing available voice commands that are graphically displayed (*user viewing of displayed available voice commands, Col. 6, Line 58- Col. 7, Line 53*); and

Speaking one or more voice commands that correspond to one or more of the available voice commands (*user speaking of displayed available voice commands, Col. 6, Line 58- Col. 7, Line 53*).

Claim 17 contains subject matter similar to Claim 11-12, and thus, is rejected for the same reasons.

Claim 18 contains subject matter similar to Claims 3 and 9, and thus, is rejected for the same reasons.

Claim 19 contains subject matter similar to Claims 4-5, and thus, is rejected for the same reasons.

Claim 20 contains subject matter similar to Claim 13, and thus, is rejected for the same reasons.

With respect to **Claim 21**, Brant further discloses:

Further navigating through the menu tree (*subsequent navigation through a sequence of menus, Col. 7, Lines 16-53*).

With respect to **Claim 22**, Brant further discloses method implementation for medical information systems (*Col. 7, Lines 16-53; Col. 3, Lines 38-45; and Col. 1, Lines 26-33*).

With respect to **Claim 23**, Brant discloses:

A control system configured to recognize and implement received voice commands to control a medical system (*speech recognition processor, Col. 6, Line 58- Col. 7, Line 15*);

A control interface that graphically displays available voice commands that are recognizable at a particular point in a control scheme of the control system (*computer display, Col. 6, Line 58- Col. 7, Line 53; and Figs. 6-8*); and

Wherein the control interface is configured to indicate recognition and receipt of a user voice command that corresponds to the available voice commands (*displayed confirmation, Col. 7, Line 54- Col. 8, Line 21*).

With respect to **Claim 24**, Brant further discloses:

The particular point is a present point in the control scheme (*voice commands that are valid for a particular medical system context, Col. 6, Line 43- Col. 7, Line 53; and Col. 10, Line 56- Col. 11, Line 6*).

Claims 25-26 contain subject matter similar to Claim 3, and thus, are rejected for the same reasons.

Claim 27 contains subject matter similar to Claim 22, and thus, is rejected for the same reasons.

With respect to **Claim 30**, Brant discloses:

A control system configured to recognize and implement received voice commands to control a medical system (*speech recognition processor, Col. 6, Line 58- Col. 7, Line 15*); and

A graphical user interface that displays recognizable voice commands that correspond to a real-time position within a menu tree of the control system (*pop-up menu on a display interface that lists available voice commands for a current menu context, Col. 6, Line 58- Col. 7, Line 53; and Figs. 6-8*).

Claim 31 contains subject matter similar to Claim 4, and thus, is rejected for the same reasons.

Claim 32 contains subject matter similar to Claim 13, and thus, is rejected for the same reasons.

With respect to **Claim 33**, Brant discloses:

Means for recognizing and applying voice commands uttered by a user to control a medical system (*speech recognition processor, Col. 6, Line 58- Col. 7, Line 15*);

Means for graphically displaying acceptable voice commands at an interface of the medical system (*computer display, Col. 6, Line 58- Col. 7, Line 53; and Figs. 6-8*); and

Means for indicating recognition and receipt of one or more voice commands uttered by the user which correspond to one or more of the acceptable voice commands (*speaker/monitor for recognition feedback, Col. 4, Lines 62-65; and Col. 7, Line 54- Col. 8, Line 2*).

Claim 34 contains subject matter similar to Claims 3 and 24, and thus, is rejected for the same reasons.

With respect to **Claim 35**, Brant discloses:

Means for the user to acknowledge indication that the control system has recognized and received the uttered voice command before the control system applies the uttered voice command to control the medical system (*confirmation means, Col. 7, Line 54- Col. 8, Line 21*).

With respect to **Claim 36**, Brant discloses the method for speech command control of a medical system, as applied to Claim 1, which can be implemented as a computer program stored in a computer-readable memory (*Col. 6, Lines 21-32*).

With respect to **Claim 37**, Brant discloses the method for speech command control of a medical system, as applied to Claims 8 and 33, which can be implemented as a computer program stored in a computer-readable memory (*Col. 6, Lines 21-32*).

Claim Rejections - 35 USC § 103

10. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

11. **Claims 7, 15, and 28-29** are rejected under 35 U.S.C. 103(a) as being unpatentable over Brant et al in view of Greenberg (*U.S. Patent: 6,514,201*).

With respect to **Claims 7 and 15**, Brant discloses the medical device system capable of being controlled using speech recognition and displaying available commands to a user, as applied to Claims 1 and 8. Although Brant discloses the benefit of controlling medical imaging systems (*Col. 10, Lines 42-46*), Brant does not explicitly disclose the types of medical imaging

Art Unit: 2626

systems capable of being controlled. Greenberg, however, recites voice control of an ultrasound imaging system, wherein users are presented with a display of available voice commands (*Col. 5, Line 35- Col. 6, Line 65; and Figs. 5-7*).

Brant and Greenberg are analogous art because they are from a similar field of endeavor in speech-controlled medical systems. Thus, it would have been obvious to a person of ordinary skill in the art, at the time of invention, to modifying the teachings of Brant with the concept of using speech commands to control an ultrasound imaging device as taught by Greenberg in order to provide a more efficient and user-friendly interface to an ultrasound imaging device (*Greenberg, Col. 2, Lines 28-43*).

With respect to **Claim 28**, Brant further discloses:

The medical system is a PACS and the control interface is a PACS workstation (*ultrasound image archive review workstation, Col. 5, Line 35- Col. 6, Line 65*).

With respect to **Claim 29**, Brant further discloses:

The available voice commands are displayed on a PACS workstation monitor (*Figs. 5-7, Col. 6, Lines 31-49*).

Conclusion

12. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure:

Van Kleeck et al (U.S. Patent: 5,890,122)- teaches a computer interface that displays a list of available voice commands.

Ortega et al (*U.S. Patent: 6,182,046*)- discloses a pull down menu that identifies voice commands that can be performed.

Lemelson et al (*U.S. Patent: 6,603,491*)- discloses a pop-up menu that allows a user to choose a speech command.

Jordan (*U.S. Patent: 6,823,203*)- discloses control of a diagnostic image database using voice commands.

Wang et al (*U.S. Patent: 6,911,916*)- discloses a GUI that displays available voice commands for use in a medical data system.

Gomez (*U.S. Patent: 7,099,829*)- discloses a system that displays a listing of valid speech commands based upon a present operational state.

Erdel et al (*"Speech Recognition Technology: An Outlook for Human-to-Machine Interaction," 2000*)- discloses various ways in which speech recognition technology can be applied to healthcare systems.

Holzman (*"Speech-Audio Interface for Medical Information Management in Field Environments," 2001*)- discloses the use of speech recognition in a medical information application.

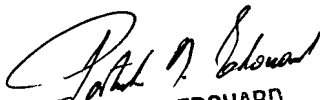
13. Any inquiry concerning this communication or earlier communications from the examiner should be directed to James S. Wozniak whose telephone number is (571) 272-7632. The examiner can normally be reached on M-Th, 7:30-5:00, F, 7:30-4, Off Alternate Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Patrick Edouard can be reached at (571) 272-7603. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 2626

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

James S. Wozniak
5/8/2007


PATRICK N. EDOUARD
SUPERVISORY PATENT EXAMINER